October 1999

AROUND DOE

Interim security reviews completed at three labs

Interim security reviews conducted as part of safeguards and security reforms ordered by Secretary of Energy Bill Richardson were completed this summer at the three Department of Energy facilities—Lawrence Livermore, Los Alamos, and Sandia National Laboratories—that were rated "marginal" in the annual safeguards and security report released in March. The reviews were conducted by the Office of Independent Oversight and Performance Assurance.

Los Alamos improved to an overall "satisfactory" rating, the highest achievable. The laboratory has established more effective measures in cyber security, installed additional intrusion alarm sensors, improved systems to account for nuclear materials, and added additional protective force personnel.

Lawrence Livermore and Sandia again were rated "marginal," but the oversight team noted that both laboratories are implementing improvements to achieve a satisfactory rating by December 1999. The facilities have added more armed guards, increased patrols, improved tactical response, and implemented measures pending installation of additional intrusion alarms.

Florida coalition is 75th Clean Cities member

On Oct. 1, the Department of Energy designated the Florida Space Coast Clean Cities Coalition as the 75th member of the Clean Cities program. The coalition serves Brevard, Indian River, Lake, Seminole, St. Lucie, Osceola, Orange, Okeechobee, and Volusia Counties in East-Central Florida. Partners in the coalition include the Florida Solar Energy Center, NASA-Kennedy Space Center, People's Gas, City Gas, Walt Disney World, and the U.S. Postal Service.

Clean Cities is a voluntary government and industry partnership coordinated by the Department. The program is designed to achieve a cleaner environment in major U.S. cities, reduce dependence on imported oil, and stimulate local economies by increasing the use of alternative fuels and alternative fuel vehicles.

New designs sought for fossil fuel plants

On Oct. 1, the Department of Energy opened the competition for companies to begin designing a new type of energy facility that could change the way people think about fossil fuel power plants in the 21st century. Called "Vision 21," the new class of fossil fuel plants would produce electricity, chemicals, fuels, or perhaps a combination of products in ways tailored to meet specific market needs.

"If this effort is successful, we could remove environmental barriers to future fossil fuel use." said Secretary of Energy Bill Richardson.

Up to $30 million will be offered for winning projects, with each of the initial projects expected to receive from $1.5 million to $2.5 million. Private industry will be required to provide at least 20 percent of each project's cost.

The Department is issuing the solicitation and plans to accept proposals throughout the coming year. Beginning around Jan. 31, 2000, project selections will be announced every four months. The due date for proposals for the first evaluation period is Nov. 30, 1999.

The solicitation is available on the Internet at **http://www.fe.doe.gov/business**. ❖

United States
Department of Energy (PA-40)
Washington, D.C. 20585

Official Business

Milestones

YEARS OF SERVICE

October 1999

Headquarters

Chief Financial Officer - Elizabeth E. Smedley (35 years), Sherry S. Reid (30). **Defense Programs** - Orvis W. Taylor (25). **Economic Impact/Diversity** - Brenda J. Degraffenreid (25). **EIA** - Alonzo Jenkins (35). **Energy Efficiency** - Patricia A. O'Brien (35), Ronald V. Santoro (30). **Envir. Management** - Dorothy T. Hawkins (30), Laverne M. Smith (25), Mary J. Wisenbaker (25). **Envir., Safety & Health** - Dee M. Young (30), Joseph F. Weiss (25).

Fossil Energy - Larine A. Moore (30), Alfred C. White (30), Robert L. Kane (25). **International Affairs** - Peter P. Jodoin (30). **Management/Administration** - Theda P. Bagdy (35), Deborah M. Henderson (25). **National Security** - Edward F. Mastal (35), Nevaire S. Rich (30), Lawrence P. Himmelsbach (25). **Nuclear Energy** - Frances M. Dix (30), Jo Ann B. Norris (30). **Radioactive Waste** - Susan E. Klein (25).

Field

Albany Research Center - Hon-Chung Ko (25). **Albuquerque** - Phillip R. Baca (30), Christopher J. Baca (25), Ronald W. Robin (25), Pecolia B. Sharts-Meadows (25).

Chicago - Frank F. Gorup (30), Mary A. Roark (30). **Federal ETC** - David P. Berkey (30), Bradley C. Bockrath (25), James M. Ekmann (25), Thomas J. George (25), Susan D. Laczko (25), Harold D. Shoemaker (25), H. Mitchell Spengler (25), James T. Yeh (25).

Golden - Russell Eaton III (35), Ruth E. Adams (25). **Nevada** - Constance M. Barricks (30), Harold H. Bernheisel (25). **Oak Ridge** - Kathy L. Cox (25), George C. Manthey (25). **Ohio** - Derrick J. C. Franklin (25). **Savannah River** - Linda R. Wright (25). **Strategic Pet. Reserve** - Katherine G. Batiste (25), Lionel J. Gele (25).

Southeastern Power - Oscar F. Knighton (25). **Southwestern Power** - Daniel R. Voss (30). **Western Area Power** - Kim C. Anderson (25), Jimmie S. Black (25), Carol A. Capps (25), Scott T. Hicks (25), John A. Moore (25), Daniel T. Payton (25), Michael D. Ryan (25), M. Kaye Weinant (25), Michael C. Wilson (25).

RETIREMENTS

September 1999

Headquarters

FERC - Randall W. Adams (30 years), Michael J. Ahern (24), Shirley M. Ashton (37), Margaret Atkinson (28), James G. Baird, Jr. (32), John J. Bartus (25), Charlotte Brooks (21), Robert Bryant (26), Nestor J. Camino (9), Rita M. Carter (36), Yong-Ming Chen (18), James H. Chetelat (36), Eddie R. Crouse (30), Albert K. Der (30), William T. Deterding (37), Mary J. Doyle (25), Alleyne P. Easton (33), E. Yvette Ellard (36), J. W. Flint (27), Noel Folsom (27), Robert D. Forst (12), Doris V. Frazier (26), Essie R. Hardin (16), Charles F. Harland (34), Michael P. Kingston (27), Allen M. Leache (25), Michel Levant (41), Margare McGowan (34), Edward R. Meyer (24), John E. Meyer (26), Shirley C. Miller (32), James G. Moody (27), Thomas M. Mould (33), William J. Murphy (28), Garry L. Penix (34), Helen H. Peters (21), Douglas P. Redman (28), Jessie M. Robinson (28), Emily R. Sample (28), Iris F. Saunders (37), Bernard J. C. Smith (44), Jerald A. Smith (25), Ronald E. Spath (28), Alan H. Squier (10), Norma J. Thomas (21), Robert C. Tindall, Jr. (28), Robert M. Trimble (24), Emmanuel Tzanakis (14), William C. Wakefield (36), Elwood Warren, Jr. (25), Angelyn Winestock (41), Sandra B. Wyvill (39), Surender M. Yepuri (24).

Field Integration - Franklin G. Peters (26), John M. Wilcynski (28). **Science** - Doris H. Griffin (24).

Field

Savannah River - Leonard Sjostrom (37). ❖

COMING Events

November

15-19 Department of Energy 1999 Pollution Prevention Conference, Albuquerque, N. Mex. Cosponsored by the Department of Energy, Sandia National Laboratories, Los Alamos National Laboratory, and the Waste-management Education and Research Consortium. The conference includes sessions on pollution prevention activities at DOE sites; implementing pollution prevention during design, cleanup, and tear down activities; water conservation; reducing air emissions; and energy efficiency. More information is available at **http://pollutionprevention.sandia.gov/** or **http://p2.sandia.gov** or by e-mail at doep2@sandia.gov.

June 2000

12-16 International Decommissioning Symposium 2000 (IDS 2000), Knoxville, Tenn. Sponsored by the Department of Energy and its Office of Environmental Management in cooperation with the International Atomic Energy Agency. The symposium will address issues related to decommissioning United States and international nuclear facilities; treating and disposing of radioactive, chemical, and low-level and transuranic waste; and decontaminating metal and concrete. IDS 2000 promises to deliver the most current and comprehensive information on international environmental restoration efforts. Program plans include interactive workshops and sessions, live outdoor technology demonstrations, exhibits, technical tours of the Department's Oak Ridge site, and presentations from leaders in the environmental industry. More information is available at **http://www.IDS2000.org**. ❖

People IN ENERGY

Helga Christopherson has been appointed Director, Human Resources Division, Los Alamos National Laboratory, with responsibility for management and oversight of the laboratory's entire human resources function. Since 1990, Christopherson was a senior staff member in the Office of the Director of Lawrence Livermore National Laboratory (LLNL). From 1978 to 1990, she served in various human resources positions at LLNL, including Manager of Human Resources.

Secretary of Energy Bill Richardson has named **Robert DeGrasse**, Director of the Office of Worker and Community Transition since 1995, to the new position of Principal Deputy Assistant Secretary for Operations within the Office of Defense Programs. He will provide day-to-day operational oversight, guidance, and coordination of the Department of Energy's nuclear weapons research, development, and production facilities. **Gary K. King** has been named by Secretary Richardson as the new Director, Office of Worker and Community Transition. Previously, King was Policy Advisor to the Assistant Secretary for Environmental Management.

John M. Carpenter, Technical Director of the Intense Pulsed Neutron Source at Argonne National Laboratory, is the recipient of the 1998 Frank Award, presented annually by the Joint Institute for Nuclear Research in Dubna, Russia, for outstanding achievements in neutron physics. Carpenter shares his award with **Yuri Stavissky** of the Institute for Nuclear Research, Troitsk, Russia.

Jessie Roberson, Manager of the Rocky Flats Field Office, has been nominated by President Clinton to serve as a member of the Defense Nuclear Facilities Safety Board. "Jessie Roberson will be a distinguished addition to the Defense Board," said Secretary of Energy Bill Richardson. Prior to her appointment as Rocky Flats Manager in June 1996, Roberson served as Deputy Assistant Manager for Environmental Restoration and Solid Waste Management at the Savannah River Site. She has over 17 years of experience in the nuclear field. Roberson will continue to serve as Rocky Flats Manager while the United States Senate considers her nomination.

Alvin Czanderna, a research fellow and internationally recognized surface scientist at the National Renewable Energy Laboratory (NREL), has been selected by the American Chemical Society to receive its Arthur W. Adamson Award for Distinguished Service in the Advancement of Surface Chemistry. During his 22-years at NREL, Czanderna's research has focused on addressing surface science problems in multi-layered applied solar technologies.

Chris Roybal, a communications security specialist at Los Alamos National Laboratory, has been elected President of the New Mexico Municipal League. The league is a not-for-profit, nonpartisan organization that represents 102 incorporated municipalities in New Mexico. Roybal will serve a one-year term as president, beginning Oct. 1.

Secretary of Energy Bill Richardson recently presented a Superior Achievement Award to **Joseph J. DiNunno**, Member of the Defense Nuclear Facilities Safety Board (DNFSB), in recognition of his vision and counsel in the development of the Department of Energy's Integrated Safety Management program. The DNFSB is an independent agency established by Congress to provide oversight of the Department's safety management of its defense nuclear complex. DiNunno has been a Member of the Board since 1992 and was reappointed in April 1996 for an additional five-year term.

Joseph J. Buggy, Executive Vice President of Westinghouse Savannah River Company (WSRC) since 1991, has been named president of the company, replacing **Ambrose Schwallie**. WSRC manages the Department of Energy's Savannah River Site. Schwallie has been elected Executive Vice President of Morrison Knudsen Corporation and named President and Chief Executive Officer, Westinghouse Government Services Group.

Jeff Wadsworth, Deputy Director for Science and Technology, Lawrence Livermore National Laboratory, has been named a fellow of The Minerals, Metals and Materials Society, one of the highest honors in the field of metallurgy and materials science. Wadsworth is one of only five recipients this year. The Society, which has approximately 13,000 members worldwide, limits its total number of fellowships to 100 current members.

Jerry Zimmer, formerly Director of Performance Management Contract Services at the Chicago Operations Office, has been named Director, Office of Acquisition and Financial Assistance, Golden Field Office. As procurement director, Zimmer will oversee the Office of Energy Efficiency and Renewable Energy (EE) field purchasing and financial assistance activities at Golden and at EE's six regional offices around the country.

J. Michael Ramsey, leader of the Laser Spectroscopy and Micro Instrumentation Group in Oak Ridge National Laboratory's Chemical and Analytical Sciences Division, has earned a Humboldt Research Award in recognition of his lab-on-a-chip research. Nominations for the award are made by leading German scholars or research institutions. Ramsey was nominated for the award by the Institut für Spektrochemie und Angewandte Spektroskopie, where he will spend up to 12 months working with German research scientists. ❖

Astrophysics student a star in Mexico

Enrico Ramirez-Ruiz, an astrophysics student at the Department of Energy's Los Alamos National Laboratory has been awarded the highest academic youth honor for the nation of Mexico for his studies of cosmic gamma ray bursts. Mexico President Ernesto Zedillo personally presented the Premio Nacional de la Juventud - Rama Academica to Ramirez-Ruiz.

As the top candidate of 8,000 applicants in the science field, Ramirez-Ruiz won a medal and a $7,000 cash prize. He also won a second medal for having been the sole unanimous choice of the selection panel.

Ramirez-Ruiz is a student of astrophysicist and Laboratory Fellow Edward Fenimore. He has authored several scholarly papers and discoveries in astrophysics, specifically in the study of gamma-ray bursts, the largest cosmic explosions since the Big Bang.

Fenimore says that developing students such as Ramirez-Ruiz has been extremely positive. "These undergraduate students can do incredible things and have a real scientific impact if given the opportunity," he said.

The son of two University of Mexico chemistry professors, Ramirez-Ruiz came to Los Alamos after winning the prestigious 1997 Leon Lederman Award as an undergraduate science student at the University of Mexico in Mexico City. Subsequently, he won the Gabino Barreda Award at the university for the best overall grade point average in physics and a scholarship awarded by the Los Alamos Nonproliferation and International Security Division.

This fall, Ramirez-Ruiz started his graduate work at Cambridge University, England. He hopes to study with the renowned astrophysicist Sir Martin Rees, Royal Astronomer to Queen Elizabeth II. ❖

Education NOTES

Midwest Research Institute, Battelle Memorial Institute, and Bechtel Corporation—the management and operating contractor team for the Department of Energy's **National Renewable Energy Laboratory** in Colorado—recently donated $25,000 on behalf of laboratory employees to establish the "NREL Columbine Spirit Scholarship" in honor of the victims of Denver's Columbine High School tragedy. The fund will be used to award scholarships to graduates of Columbine and other Jefferson County high schools who attend the Colorado School of Mines in Golden. The scholarships will be offered first to Columbine graduates pursuing degrees in disciplines related to NREL's mission.

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The Department of Energy will fund $100,000 of a $238,900 Tucson Unified School District project to develop and demonstrate an innovative **model for integrating photovoltaics into school buildings and educational programs**. The project will involve educating students, parents, boards of education, faculty, and facility managers about solar energy and create a community awareness program. The Tucson grant is part of the Department's EnergySmart Schools partnership that brings together public and private organizations to cut school energy bills while providing comfortable classrooms.

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Thousands of students and teachers have taken their science questions straight to the experts by using NEWTON, a free service provided by the Department of Energy's **Argonne National Laboratory**. NEWTON, **http://www.NEWTON.dep.anl.gov**, provides K-12 science, math, and computer science teachers and their students a place to practice telecommunications, retrieve information on a wide variety of subjects, contact research scientists from all over the world, and open communications between classroom teachers. One of NEWTON's most popular features is "Ask a Scientist," where teachers and students can pose questions and receive answers on subjects such as astronomy, biology, chemistry, and physics.

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Since 1995, the Department of Energy's **Waste Isolation Pilot Plant** has been sharing non-sensitive, non-proprietary organizational development diagnostic tools, technical manuals, and training courses with organizations in U.S. friendly nations. To date, the International Sharing Program has filled over 1,300 requests from organizations in 76 countries. Areas of information include leadership development, safety, and management training and development. ❖

Research DIGEST

Molecular biologists at the Department of Energy's **Idaho National Engineering and Environmental Laboratory** (INEEL) are developing methods to clone the genes of mussels to economically produce large quantities of an adhesive protein found on the "feet" of the small mollusks. The mussels cling naturally underwater and their feet produce an epoxy with adhesive-like properties that rivals any "super" glue on the market. As it takes about 10,000 mussels to produce just one gram of adhesive, cloning the mussel proteins is a crucial step in developing an adhesive. The "mussel glue" has potential applications in the Navy and private marine, building, and dental industries. (Teri Ehresman, 208-526-7785)

The Department of Energy has awarded $25 million for 31 new research projects under its **Environmental Management Science Program**. Researchers at 20 universities, eight Department laboratories, and three other research institutions will conduct scientific studies focusing on environmental problems at Department facilities. Nine projects will develop characterization and monitoring technologies, eight projects will help develop cost-effective, environmentally benign methods to remove radioactive contaminants from sites, and 14 projects will study how contaminants interact with and migrate through soil and groundwater. A complete list of the projects is available at **http://emsp.em.doe.gov**.

Lighting systems researchers at the Department of Energy's **Lawrence Berkeley National Laboratory** (Berkeley Lab) and the Sacramento Municipal Utilities District (SMUD) are working together under a cooperative research and development agreement to demonstrate the energy-saving potential of compact fluorescent lamp-based torchieres that were developed at Berkeley Lab as a safer alternative to the halogen torchiere. SMUD will develop a torchiere distribution program for its residential customers. Berkeley Lab will help set a non-intrusive system to monitor their use at participating homes. The research could help increase consumer acceptance of the new technology nationwide. (Allan Chen, 510-486-4210) ❖

Texas firm adds ORNL material to portfolio

The Department of Energy's Oak Ridge National Laboratory (ORNL) has licensed Poco Graphite, Decatur, Texas, to produce Grafoam, a material developed at the laboratory that could lead to more powerful laptop computers and better aerodynamics in automobiles. Poco Graphite's license allows it to manufacture Grafoam for heat transfer products for a wide range of applications, including cooling subsystems in electronic components and satellites. It fits neatly into the company's portfolio of manufacturing specialty graphites and silicon carbide for electrical discharge machining, semiconductors, biomedical and glass industry products, and general industry.

"We are excited to be working with our longtime associates at Oak Ridge National Laboratory to bring this one-of-a-kind material to Poco's family of specialty materials," said John Beasley, President, Poco Graphite. "We believe this unique material will spark innovative solutions to thermal energy management challenges."

Grafoam is a patented carbon foam with thermal conductivity equivalent to aluminum at one-fifth the weight. Nearly 100 percent graphite, it features an open cell structure that improves heat transfer to a working fluid, like the coolant in a radiator. Unlike other carbon foam products, which act as insulators, Grafoam conducts—or removes—heat. "This could lead to extremely efficient and lightweight heat exchangers—like those in air conditioners—and heat sinks for power electronics," says James Klett, one of the developers of Grafoam and a member of ORNL's Metals and Ceramics Division.

Klett and associates Tim Burchell and Ashok Choudhury see an early application being in notebook computers, for which microprocessor speeds are limited by the ability of the systems to dissipate heat. In automobile radiators, Grafoam could be used in conjunction with standard designs to dramatically improve cooling efficiency. With the improved efficiency, Klett said the radiator could be smaller and placed toward the back of a car's engine compartment or perhaps toward the rear of the car, thus allowing for more aerodynamic designs for improved fuel economy and reduced emissions. ❖

James Klett, ORNL Metals and Ceramics Division, holds Grafoam, a patented carbon foam with superior heat transfer characteristics.

NEW Publications

1999 State Fact Book, from the Department of Energy's Office of Industrial Technologies (OIT), lists state-by-state the office's partners—manufacturers, universities, suppliers—in the national Industries of the Future program. The publication also provides state-level data on employment, wages, and shipments for nine energy-intensive industries—agriculture, aluminum, chemical, forest product, glass, metal casting, mining, petroleum, and steel. Available from the OIT Resource Room, 202-586-2090.

Annual Report of Waste Generation and Pollution Prevention Progress 1998 (DOE/EM-0464) presents and analyzes Department of Energy activities at 45 reporting sites from 1993 through 1998. The Department's progress toward achievement of the complex-wide waste reduction goals for calender year 1999 is also reported. Available from Mike Sweitzer, Manager, Albuquerque National Pollution Prevention Program, 505-845-4347; or at **http://www.em.doe.gov/wastemin**, select "EM-77 Web Site" under the Annual and Quarterly Reports section.

Office of Inspector General reports: ***Nuclear Material Protection, Control, and Accounting Program*** (DOE/IG-0452); ***Management of Laboratory Directed Research and Development at the National Renewable Energy Laboratory*** (WR-B-99-05); ***Planned Waste Shipments to the Waste Isolation Pilot Plant*** (WR-B-99-06). Available from the U.S. Department of Energy, Office of Inspector General Reports Request Line, 202-586-2744; or at **http://www.hr.doe.gov/ig/mainhome.htm**. ❖

One million and counting!

Today's consumers need information to help them understand how home energy systems work and to identify energy-efficient products when they shop. To get this information into the hands of consumers, the Department of Energy has teamed with Owens Corning of Toledo, Ohio, to produce an award winning booklet, "Energy Savers—Tips for Saving Energy and Money at Home."

Lani MacRae, Office of Building Technology, State and Community Programs, Office of Energy Efficiency and Renewable Energy, compiled a list of more than 100 ways to save energy at home and a shopping guide for purchasing energy-efficient appliances for the booklet. The Department's National Renewable Energy Laboratory developed the publication, which this month has surpassed one million copies printed and distributed.

The key to the large distribution has been cooperation between the Department and private companies, state agencies, and local governments. Owens Corning, the Department's primary partner in the project, has sponsored printing of the booklet for the past three years. An additional 225 private companies and state and local governments have purchased the booklets and distributed them to their customers and constituents.

The booklet has won numerous awards in the past year, including the top prize in the category of technical publication from the Society for Technical Communication at its international competition. The publication also placed first in the category of brochures for a general audience in a National Association of Government Communicators competition.

For a copy of the "Energy Savers" booklet, call the Department's Energy Efficiency and Renewable Energy Clearinghouse at 800-363-3732. To view the booklet on line, visit **http://www.eren.doe.gov/consumerinfo/energy_savers**. ❖

International Atomic Energy Agency positions overseas

Following is a sample of open IAEA positions. Nominations will be selected for consideration along with applicants from other IAEA member nations. Assignments are usually for three years and are deemed to be exempt from national income tax. Copies of special application packets, including vacancy announcements, can be obtained from Maggie Manning, 202-586-5491, or the Career Management Resource Centers at either the Forrestal or Germantown Buildings. Additional vacancies for professional and higher-grade positions are posted on **http://www.iaea.or.at/worldatom/vacancies/**.

Approx Salary	Position Title	Vacancy Number	Closing Date
$54,516	Technical Information Officer, Dept. of Nuclear Energy	99/063	Nov. 30
$64,545	Nuclear Data Physicist, Dept. of Nuclear Sciences and Applications	99/060	Nov. 30
$44,669	Safeguards Inspector, Dept. of Safeguards	99/SGO-3	Dec. 31
$53,196	Safeguards Inspector, Dept. of Safeguards	99/SGO-4	Dec. 31

LANL technology offers better monitoring for radiological workers

The Department of Energy's Los Alamos National Laboratory (LANL) has set a new standard for the monitoring of radiological workers who have a potential for exposure to plutonium. LANL scientists have perfected an in vitro analysis technique using thermal ionization mass spectrometry, or TIMS.

TIMS enables laboratory analysts in the bioassay program to monitor for a lifetime dose from plutonium down to 0.1 rem—making this technique 40 times more sensitive than the measurement levels associated with existing alpha spectroscopy methods that can only measure a minimum detectable dose of 4 to 6 rem. TIMS' improved sensitivity, coupled with the use of modern data analysis techniques, makes its plutonium dose estimates 1,000 times more accurate than what was previously possible. TIMS is the only technology currently available that complies with the latest Department regulation—10 CFR 835—for in vitro bioassay monitoring of plutonium-239.

Sandy Wagner, bioassay analytical project leader in LANL's Radiochemistry Group, says that TIMS takes bioassay testing to a whole new level. "We implemented the procedure a couple of years ago, and we're now to the point that it's standardized. We've moved into production mode," Wagner said.

Since Manhattan Project days, plutonium worker monitoring has been done through alpha spectroscopy—a process that counts the number of alpha particles emitted from a sample. Alpha spectroscopy is less sensitive and cannot distinguish between the isotopes of plutonium 239 and 240. TIMS analysis, on the other hand, can easily distinguish between Pu-239 and Pu-240.

TIMS was originally used in the nuclear testing program to examine fission yields and products of underground nuclear tests. It works by placing a processed sample onto a filament that is then placed into the vacuum chamber of a mass spectrometer. The filament is resistively heated, atomizing and ionizing the plutonium sample. The ions are accelerated through a magnetic field, facilitating separation according to mass, with heavier ions having more momentum. Magnetic field scanning provides momentum focusing of each mass onto an exit slit. Ions of each mass are than detected using a pulse counting detector system.

At present, the TIMS process is more expensive than alpha spectroscopy because it requires ultra-pure materials and a Class-100 clean room. Costs are expected to come down as the number of samples increases and instruments are automated. Currently, LANL's main customers for bioassay TIMS analysis are internal. "We would love to expand our customer base and provide radiological workers throughout the complex with this level of monitoring," said Wagner. For further information on TIMS analysis, contact Sandy Wagner at 505-665-7031 or by e-mail at swagner@lanl.gov. ❖

Indian Summer students get their feet wet

Summer vacation is often time for students to forget the rigors of school. Not so for students in the Indian Summer program, sponsored by the Department of Energy's Idaho National Engineering and Environmental Laboratory, where summer means learning science in the outdoor classroom of the Salmon River's streams and tributaries in Idaho.

A fish recovery project of the Shoshone Bannock Tribes, Indian Summer educates students on the plight of endangered salmon and steelhead and seeks to find an answer. While the program helps the fish, it also helps the students by teaching them science, responsibility, teamwork, interaction with others, and Native tradition.

Students focus on assessing stream health, enhancing the climate for egg incubation, restoring stream habitat, and educating the public about the program. "This is streamside, hands-on, get-your-feet-wet research science," says Ed Galindo, Shoshone-Bannock Junior-Senior High School science teacher and Indian Summer founder and director.

In its fifth year, the project maintains 40 sites in the Salmon and Challis National Forests, Sawtooth National Recreation Area, and private lands. Streamside incubators at the sites hold one million eggs, all monitored by students from the time the eggs are placed in incubators until they hatch, develop into fry, and escape in the wild. Around 90 percent of the eggs mature and leave the incubators on their own. The "students hope that 5,000—one half of one percent of the eggs—will eventually return as adults to spawn.

Indian Summer camp director Ed Galindo briefs students before checking incubators along the West Fork of the Yankee Fork of the Salmon River in Idaho.

Indian Summer is consistent with the Shoshone Bannock Tribes' values, traditions, and culture and carries the prayers and blessings of Tribal Elders. ❖

Chemical reuse program saves money and environment

The Department of Energy's Oak Ridge Institute for Science and Education (ORISE) has a new program to reuse surplus chemical supplies. The Chemical Reuse and Redistribution (Chem Reuse) Program finds "homes" for the chemicals, saving money and avoiding the purchase of new chemicals and the disposal of unused chemicals. Over the past two years, ORISE has saved more than $122,000, and the reuse helps protect the environment by not putting chemicals in a landfill or incinerator.

ORISE was invited to test ChemMIST, a chemical inventory program developed by Berea College in Kentucky that allows facilities to track chemical containers and amounts from purchase to disposition. Tom Wantland (right), ORISE environmental/hygiene officer, saw another use for ChemMIST's tracking system. He created the Chem Reuse Program to find other ORISE laboratories and programs to reuse chemicals from discontinued research, which were already being tracked by ChemMist. For his work, Wantland received a 1999 Oak Ridge Operations Office Pollution Prevention Award. ❖

Students reap benefits of renewable education

High school students from the Renewable Energy Environmental Program (REEP), a summer academy hosted by Texas Southern University, spent a week at the Department of Energy's National Renewable Energy Laboratory (NREL) learning about renewable energy. REEP was designed to boost minority students' interest in pursuing careers in renewable energy. "This program has been a real eye-opener for the students by teaching them how to use renewable energy, conserve energy, and reduce waste," said Robin Brooks of Texas Southern University.

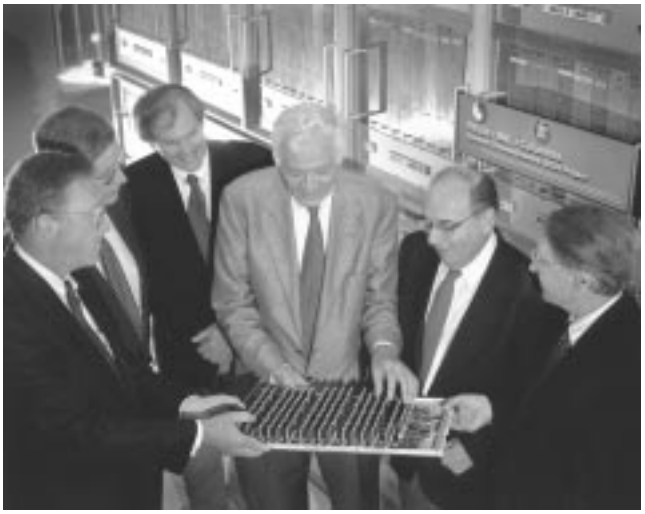
After touring NREL's research facilities, attending seminars on photovoltaic fundamentals, and building model solar-powered cars and circuit boards, the students put their new skills to work. They installed three 36-watt photovoltaic modules to provide electricity for pagoda style lamps outside the NREL Visitors Center. At right, the students are installing wires connecting a photovoltaic panel to its battery. ❖

Laboratory management agreements signed

A major step in implementing the April 1999 changes to the Department of Energy's organization and management structure was reached with the recent signing of the first laboratory management agreements. The agreements designate the Offices of Science and Defense Programs as the Cognizant Secretarial Officers for Pacific Northwest and Lawrence Livermore National Laboratories (PNNL, LLNL), respectively, and recognize PNNL as having science and technology and environmental cleanup missions.

The PNNL agreement was signed by Martha Krebs, Director, Office of Science; James Owendoff, then Acting Assistant Secretary for Environmental Management; and Keith Klein, Manager, Richland Operations Office. In the photo, Krebs and James Turner, Manager, Oakland Operations Office, sign the LLNL agreement. Thomas Gioconda, Acting Assistant Secretary for Defense Programs, approved the agreement later. ❖

Brookhaven establishes data-intensive computing center



The Department of Energy's Brookhaven National Laboratory (BNL) and the State University of New York at Stony Brook (USB) have established the Brookhaven Center for Data-Intensive Computing. The partnership joins the computational and software expertise of the university's Departments of Computer Science and Applied Mathematics and Statistics with Brookhaven's capability for handling and storing large amounts of data. The center will work on expanding computational power for BNL and the region through networked computing.

In the photo, looking at a component of the RIKEN-BNL supercomputer, are some of those involved with establishing the new center. From the left are Robert McGrath, USB Provost and Executive Vice President for Academic Affairs; Rollin Richmond, formerly USB Provost; Jim Davenport, Chairman, BNL Department of Applied Science; James Glimm, Director, Brookhaven Center for Data-Intensive Computing; Arnold Peskin, the Center's Deputy Director; and Peter Paul, BNL Deputy Director for Science and Technology. ❖

Glasman named Facility Representative of the Year

Michael Glasman, Facility Representative for uranium facilities at the Oak Ridge Y-12 Plant, has been named the Department of Energy Facility Representative of the Year for 1998. Glasman competed with approximately 220 Facility Representatives across the DOE complex. He was recognized for his discovery of programmatic and work performance deficiencies in the Y-12 welding quality assurance program and for leading a team which identified problems with over 30 elevators that had failed safety inspections.

Facility Representatives are the day-to-day "eyes and ears" of line management at Department facilities and laboratories and undergo rigorous basic and facility-specific training. If a problem occurs, it is the Facility Representative's responsibility to respond and ensure the contractor is taking appropriate measures to address the issue.

Deputy Secretary of Energy T.J. Glauthier (left) presented the award to Glasman on Sept. 24, 1999, at Department Headquarters in Washington, D.C. ❖

Robot eyes Hanford U-Plant ventilation tunnel

In early September, a robot traversed the Hanford U-Plant ventilation tunnel, gathering information that ultimately may influence the disposition of Hanford's five chemical processing facilities. The inspection was part of an initiative in which options for the final disposition of the facilities are being studied by Bechtel Hanford Inc., the prime environmental restoration contractor at Hanford.

The Andros Mark VI robot (at left) traveled the equivalent of nearly three football fields, inspecting the concrete tunnel for structural integrity, obtaining radiation measurements and smear samples, and gathering video. Access to the tunnel is through a three-foot-wide chimney, which required the robot to curl up like an insect and then extend its arm and equipment once inside the tunnel.

The robot is recycled equipment from an earlier Hanford mission. Engineers at the Department of Energy's Pacific Northwest National Laboratory reconfigured it for inspecting the U-Plant tunnel, saving the Department about $100,000. ❖

Laboratories to conduct analytical traceability

The Department of Energy's National Analytical Management Program (NAMP) recently signed Memoranda of Agreement with the Radiation and Environmental Sciences Laboratory (RESL), located at the Idaho National Engineering and Environmental Laboratory, and the Environmental Measurements Laboratory (EML) in New York. The agreements designate the two facilities as reference laboratories for the DOE Radiological Traceability Program.

NAMP is operated within the Office of Site Operations in the Office of Environmental Management (EM-70). The Radiological Traceability Program was developed to ensure that both internal and external analytical data quality requirements are met in the Department's environmental efforts. The objective of the program is to ensure that data from radiological analyses conducted on thousands of environmental samples taken each year in support of the Department's environmental cleanup programs are traceable back to measurements made at the National Institute of Standards and Technology (NIST).

The expertise of RESL and EML will assist in ensuring that analytical data used in the Department's environmental cleanup decisions are of the highest reliability possible. These two laboratories currently operate programs that evaluate the performance of other laboratories that provide environmental analytical testing services to the Department.

Displaying the signed Memoranda of Agreement are (l-r) Ray Bath, Environmental Measurements Laboratory; Gene Schmitt, Office of Site Operations, EM-70; Stan Morton, National Analytical Management Program, EM-70; and Doug Carlson, Radiation and Environmental Sciences Laboratory.

As reference laboratories, the two facilities will be able to demonstrate that stated radionuclide concentrations in environmental samples fall within the specified statistical range of values reported by NIST. This will provide additional consistency, reliability, and ease of regulatory approval of environmental radiological data generated for the Department. This level of confidence in analytical data is critical in verifying that all health and ecological risks have been addressed in the course of site cleanup activities. ❖

Research begins on 21st century fuel cells

The Department of Energy has selected four companies to begin developing basic designs and manufacturing processes for a new generation of ultra-low-cost 21st century fuel cells. McDermott Technology Inc., Alliance, Ohio; Allied Signal Inc., Torrance, Calif.; NexTech Materials Ltd., Worthington, Ohio; and Technology Management Inc., Cleveland, Ohio, will investigate several alternative approaches to manufacturing all-solid-state ceramic components and fabricating them into future fuel cell power plants.

"Fuel cells can offer a true breakthrough in 21st century power generation—combining high power generating efficiencies with superior environmental performance," said Secretary of Energy Bill Richardson. "The major technical challenge is cost, and while we have made excellent progress in reducing costs, we see the potential for even more dramatic reductions by developing new designs and manufacturing methods."

The new projects will expand the types of ceramic-based fuel cell technologies in the Department's research program. Studies will be done on both flat plate (planar) and tubular (extruded monolith) designs. Until now, the Department's program to develop ceramic fuel cells has concentrated primarily on configurations that arrange the solid electrodes and electrolyte materials in concentric tubes. The goal is to bring fuel cell power plant costs down to a range of $400 to $600 per kilowatt—or roughly half the projected costs of today's technology.

The projects are valued at nearly $24 million and include 20 to 50 percent cost-sharing from the companies. The Department's share will be nearly $13 million. Each project will last two to three years. During this time, the companies must show sufficient cost-reduction potential to proceed to subsequent phases.

McDermott Technology Inc. will focus on fabricating low-cost solid state fuel cell components using tape casting, punching, and screen printing. Allied Signal Inc. will develop a manufacturing process that makes thin electrolytes by tape calendering and metallic unitizing of flat-plate cells. NexTech Materials Ltd. will research co-sintered electrode support of planar fuel cells, spin-coated ultra-thin electrolytes, and co-extrusion of monolithic shapes. Technology Management Inc. will focus on screen printing of planar fuel cell stacks.

Additional information on the fuel cell research and development program is available at **http://www.fe.doe.gov**. ❖

Department, states to cooperate on cleanup

On Sept. 10, 1999, Secretary of Energy Bill Richardson signed Statements of Principles with Colorado Governor Bill Owens, South Carolina Governor James Hodges, Tennessee Governor Don Sundquist, and Washington Governor Gary Locke. Secretary Richardson and the four governors have committed to work together on real world solutions for completing the cleanup and closure of those Department of Energy sites that helped produce nuclear weapons for our national defense.

"We are beginning a new era of cooperation between the Department of Energy and the states to clean up the lingering legacy of the Cold War," said Secretary Richardson. "These principles embody a partnership that is focused on protecting the public and the vast natural resources that our sites represent."

Traditionally, the Department has worked with each state individually on cleanup details and future issues, such as economic diversification. The new Statements of Principles outline issues common to all the states as well as issues specific to each state and defines how the Department and states can work cooperatively. The common issues include completing cleanup as expeditiously as possible and in compliance with state and federal regulations, obtaining a commitment for predictable and adequate funding, continuing investments in science and technology, and protecting groundwater assets.

State-specific issues identified in each state's document include:

- **Colorado** - Closing the Rocky Flats site by 2006 and developing mutually acceptable land use options.
- **South Carolina** - Defining a long-term mission and long-term comprehensive plan for the Savannah River Site and assuring adequate funding to support new missions.
- **Tennessee** - Developing and implementing a final disposition path for low-level and mixed low-level waste generated and/or stored on site and developing mutually acceptable cleanup levels.
- **Washington** - Sustaining the commitment and funding to meet milestones in current agreements between the Department and the state and making the Tri-Cities community a national and international leader in technology. ❖

Ford delivers breakthrough hybrid vehicle

On Oct. 5, in a ceremony at Department of Energy Headquarters, Secretary of Energy Bill Richardson received the keys for the P2000 LSR hybrid electric vehicle from Bill Powers, Ford Motor Company Vice President for Research. The vehicle uses advanced automotive technologies to achieve fuel economy of more than 60 miles per gallon and an extended driving range of 420 miles on one tank of fuel.

Ford Motor Company developed the P2000 LSR (low storage requirement) hybrid vehicle for the Department under a 50-percent cost-shared contract under the Partnership for a New Generation of Vehicles (PNGV) program. "The delivery of this breakthrough car demonstrates that our Partnership for a New Generation of Vehicles program is producing measurable results for American consumers, the economy, and the environment," said Secretary Richardson.

The PNGV program is a joint initiative between the Federal Government and the three domestic auto manufacturers aimed at developing a mid-size family sedan with a fuel economy of up to 80 miles per gallon by 2004 without sacrificing comfort or safety. Through PNGV, government and industry researchers also are working to make advanced propulsion and materials technology more cost efficient. The Department of Energy is the lead government agency involved in the program.

On a brisk October day, Secretary of Energy Bill Richardson greets Bill Powers, Vice President for Research, Ford Motor Company, upon delivery of the P2000 LSR hybrid electric vehicle.

The Ford P2000 LSR hybrid is a mid-size family sedan that combines an advanced compression-ignition, 1.2 liter direct-injection engine with an integrated starter/alternator to provide a sophisticated hybrid propulsion system. The single electric motor provides power assistance during acceleration and converts braking energy to electricity, recharging the small, high-power nickel metal hydride battery. The vehicle includes an automatically shifted manual transmission that is more efficient than conventional automatic transmissions. The P2000 LSR is 40 percent lighter than a conventional vehicle of similar size due to the use of carbon fiber composites, magnesium, and aluminum. ❖

Department celebrates Hispanic Heritage Month

On Sept. 15, 1999, Secretary of Energy Bill Richardson kicked off the Federal Government's and the Department of Energy's observance of National Hispanic Heritage Month, a celebration of the contribution of Hispanic men and women to all aspects of American culture. The theme for this year's celebration was "A Vision for the 21st Century." The month continued through Oct. 15.

A two-part program at the Department's Headquarters Forrestal Building in Washington, D.C., was broadcast via satellite to Department sites nationwide. The Department hosted the first Interagency Federal Hispanic Heritage Month awards program and its annual Hispanic Heritage Awards for Achievement in Education.

Secretary of Energy Richardson, joined by Maria Echaveste, Deputy Chief of Staff to President Clinton, presented 13 Federal Government awards to individuals and groups representing Federal agencies across the country. "This is the first time any Administration has convened a gathering to recognize Federal employees who excel in leadership, build partnerships with the Latino community, and work to further the employment and empowerment of Hispanics in Federal service," Secretary Richardson said.

Secretary Richardson also presented the Department's Hispanic Heritage Awards for Achievement in Education to eight Department and contractor employees and six students. The awards recognize employee achievements in providing educational opportunities and other community service activities that have had a significant impact on our nation's youth. Individual students who have benefitted from these educational opportunities also were recognized. The award winners are:

Secretary of Energy Bill Richardson (front, third from right) and the winners of the Department of Energy Hispanic Heritage Awards for Achievement in Education.

- Rodolfo Cruz, Director, Office of Human Resource Management, Richland Operations Office;
- Ana Rosado-Gonzalez, Program Manager, Environmental Management Office, Oak Ridge Operations Office;
- William E. Nay, Office of Science, DOE Headquarters;
- Anibal L. Taboas, Group Manager, Environmental Programs, Chicago Operations Office;
- Shannon Bowman, Diversity Programs Manager, Lockheed Martin Idaho Technologies Company;
- Virginia Rey, Radiation Protection Services Group, Los Alamos National Laboratory;
- Peter Soo, Department of Applied Science, Brookhaven National Laboratory;
- John A. Medina, Employee Relations Manager, Bechtel Nevada; and
- Students Igrid Rosario Gregory, Kimberly N. Pellechi, Carla Maldonado, Yvette T. Collazo Reyes, Doris Gail Sandoval, and Onarae V. Rice.

Throughout Hispanic Heritage Month, many Department sites and facilities sponsored events recognizing employee contributions to the Hispanic community, as well as past and present contributions of Hispanic Americans to our nation. ❖

Education initiatives help Hispanic students

On Oct. 8, at the 1999 U.S. Hispanic Leadership Conference's Educational Achievement Luncheon in Chicago, Secretary of Energy Bill Richardson called on educators, professionals, and community activists to take an active part in helping Hispanic students continue their education and achieve their full potential. Secretary Richardson also highlighted two Department of Energy initiatives that are helping bring qualified and talented Hispanics into the Department's work force.

The Department, in partnership with the Hispanic Scholarship Fund, established the Environmental Hispanic Scholarship Program to award scholarships to community college and university students in the fields of science, math, and engineering. The program emphasizes disciplines that will help the Department meet its environmental cleanup mission. Recently, $220,000 in scholarships was awarded to 76 recipients.

Under the Community College Initiative, the Department is working with 70 community colleges—most of which serve predominantly Hispanic, Native American, and African American students—to provide research opportunities. The initiative was tested this summer, bringing 125 students to the Department's national laboratories. ❖

1999 Combined Federal Campaign kicks off

On Oct. 6, Secretary of Energy Bill Richardson and Secretary of Health and Human Services Donna Shalala kicked off the Department of Energy Headquarters 1999 Combined Federal Campaign in a program outside the Department's Forrestal Building. The program featured music from the EPA Dixieland Jazz band, representatives from participating CFC charities, and refreshments.

This year's campaign theme is "It All Comes Back to You." The campaign runs through Nov. 24, 1999, the day before Thanksgiving, in recognition of and thanks for the opportunity to share with others. The goal is $777,777.77.

CFC Vice Chair Rose E. Gottemoeller, Assistant Secretary for Nonproliferation and National Security, and CFC Campaign Manager John Rooney, Office of Arms Control and Nonproliferation (NN-40), are coordinating the Headquarters activities. Federal employees again are asked to help those in need by pledging their support to meet the Headquarters goal. Keyworkers have been designated in program offices and will be contacting and distributing information to employees.

Contributions from federal employees throughout the years have supported about 45,000 agencies and chapters nationwide, helping millions of people. Contributions have been used for many good causes, including disaster relief, emergency food and shelter, crisis intervention, medical research, day care, physical rehabilitation, and youth development.

DOE field offices will be coordinating and scheduling local campaigns. Secretary Richardson encourages Department employees across the country to participate in planned activities and to support their local campaign efforts. ❖

Secretary Richardson kicks off the Department of Energy Headquarters Combined Federal Campaign outside the Forrestal Building in Washington, D.C.

World's largest wind power facility dedicated

On Sept. 17, 1999, the Department of Energy helped dedicate the world's largest wind power generating facility in Storm Lake, Iowa. Dan Reicher, Assistant Secretary for Energy Efficiency and Renewable Energy, represented the Department at the event.

Owned and operated by Enron Wind Corporation, the new facility will employ technology jointly developed and tested by DOE and Enron. "The turbines at Storm Lake will allow us to better utilize the vast resource of wind power," said Secretary of Energy Bill Richardson. "This public-private partnership is producing tangible results that will support the continued development of wind technologies and speed wind power to the open market."

The annual output at the Storm Lake site is projected to equal the electricity created from burning 1.3 million barrels of oil. The facility has 257 wind turbines, each capable of generating up to 750 kilowatts, and will generate enough electricity to supply 71,000 American homes. The electricity will be purchased by Mid-American, headquartered in Des Moines, Iowa, and IES Utilities, headquartered in Cedar Rapids.

The Department partnered with Zond Energy Systems, the manufacturing arm of Enron Wind Corporation, to develop and test a 550 kilowatt wind turbine, the predecessor to the 750 kilowatt turbine used in the new Storm Lake facility. DOE currently is working with Enron to develop a 1,000 kilowatt wind turbine, which will greatly enhance the competitiveness of wind energy and open up large markets in the Midwest.

Wind power has been the fastest growing worldwide energy source for the past decade. Capacity in the United States currently totals approximately 2,500 megawatts, enough electricity to supply more than 800,000 typical U.S. households. Today's wind technology is capable of delivering electricity at a cost of between four and six cents per kilowatt hour.

The Department's Wind Powering America initiative announced in June (*DOE This Month*, July 1999) seeks to dramatically increase the use of wind energy in the United States over the next 10 years. The goals of the initiative are to triple the number of states which have more than 20 megawatts of wind capacity to 24 by 2010, to increase the Federal Government's use of wind generated electricity to five percent by 2010, and to supply at least five percent of the nation's electricity needs with wind by the year 2020. ❖

Secretary advances U.S.-Russia partnership

Secretary of Energy Bill Richardson was in Russia Sept. 28 to Oct. 2, 1999, to review a number of joint U.S./Russian nuclear nonproliferation programs. The Department of Energy is working with Russia and other independent states of the former Soviet Union to prevent nuclear material and nuclear weapons knowledge from being diverted to rogue nations and terrorists. Secretary Richardson visited the cities of Murmansk, Dmitrovgrad, Sarov, and Moscow. The Secretary's Russian counterpart, Yevgeniy Adamov, Minister of Atomic Energy, joined him at some of his stops in the four cities.

Secretary Richardson stressed the importance of the relationship between the United States and Russia and said he wants to expand joint efforts to prevent the theft of nuclear weapons materials. "American policies toward Russia have been focused on building grass-roots links to aid in the transition toward democracy and a market-based economy, and that is exactly the strategy we have used in Russia's nuclear cities and the weapons complex," Secretary Richardson said. "While there is a great deal of work ahead, now is not the time to discard the progress that has been made in the last few years."

At the conclusion of his trip, Secretary Richardson pointed to examples of what has been done and what can be done with continued efforts on the part of both countries in five key areas.

Stopping the spread of nuclear weapons and materials. During a tour of a storage site in Murmansk which houses Russian nuclear naval vessels' fuel that had been vulnerable to attack, Secretary Richardson saw firsthand an upgraded security system developed under the Department of Energy's Material Protection Control and Accounting Program to protect the nuclear fuel. Fresh nuclear fuel used by the Russian Northern Fleet will be consolidated at the site to secure it against theft.

Reducing the nuclear arsenal. Secretary Richardson visited the Research Institute for Atomic Reactors in Dmitrovgrad and reviewed new techniques for disposal of excess weapons-grade plutonium. The Department of Energy provided support for the work. The institute has upgraded security at its storage vaults and computer tracking of nuclear materials on-site.

Employment transition for nuclear scientists. In the closed and once secret "nuclear city" of Sarov (formerly known as Arzamas-16), Secretary Richardson participated in the opening of the city's first competitive software enterprise. The Sarov Open Computing Center will help match the skills of scientists, engineers, and technicians with the worldwide demand for computer programming, modeling, engineering, and design. Also, a new partnership under the Nuclear Cities Initiative will bring the European Bank for Reconstruction and Development's highly successful Small Business Loan Program to the nuclear cities of Sarov, Snezhinsk, and Zheleznogorsk.

Promoting nuclear safety and security. Through a live interactive link with the DOE headquarters' Emergency Operations Center, Secretary Richardson and Minister Adamov opened the MinAtom Situation and Crisis Center in Moscow. The real-time MinAtom Center will allow experts from both countries to have direct communication in times of nuclear or environmental emergencies.

Energy development. At the Moscow Medical Academy, Secretary Richardson announced a joint project between DOE and the United Nations Foundation to help the academy and other Russian hospitals lower their energy bills and implement more energy-efficient practices. Also in Moscow, Secretary Richardson and Russian Minister of Fuel and Energy Viktor Kalyuzhny signed a joint statement to help strengthen Russia's coal energy supply and delivery systems and share clean coal technologies. ❖

Department sponsors workshop in Russia

The Department of Energy's Initiatives for Proliferation Prevention (IPP) Program sponsored a workshop Sept. 1-3, 1999, in Novosibirsk, Siberia. The "Russian Sponsored Biological Research in the New Millennium" workshop provided a forum for United States, Western, and Russian scientists to share research and ideas for collaboration and explore the direction of science into the next century. The workshop was jointly sponsored by the U.S. Department of State's International Science and Technology Center, the Russian Ministry of Science and Technologies, and the North Atlantic Treaty Organization.

The IPP Program partners the Department's national laboratories with former nuclear, chemical, and biological weapons institutes in Russia, Kazakhstan, Ukraine, and Belarus in an effort to stabilize and redirect the institutes and scientists to peaceful, non-military applications of their expertise.

The workshop was attended by about 140 participants, including more than 85 former Soviet scientists, the majority being Russian. Workshop sessions included environmental biotechnology and basic research and diagnostics and vaccines in emerging and re-emerging infectious diseases. Participants also toured the laboratories of the Russian State Research Center for Virology and Biotechnology. Several partnerships were forged between U.S. companies and U.S.-Russian scientific teams. A future workshop is planned on commercialization efforts and opportunities of the collaboration. ❖

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Inside

On our cover

Secretary of Energy Bill Richardson does some hands-on work with lead-free solder developed by metallurgist Iver Anderson (right) and a team of scientists at the Department of Energy's Ames Laboratory in Iowa and the Department's Sandia National Laboratories in New Mexico. Secretary Richardson and United States Senator Charles Grassley of Iowa (left) toured Ames on Sept. 17, 1999, and were briefed on research involving lead-free solder, magnetic refrigeration, powder metallurgy, and computer clustering technology. This was the first visit by a Secretary of Energy to Ames Laboratory since the Department was established in 1977.

DOE This Month

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OCTOBER 1999

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